

REMARKS

This communication is responsive to Office Action of June 12, 2003 in which the following objections were raised: [1-2] The proper language and format for the abstract should be used. Correction is required; [3] The disclosure was objected to because of informalities; [4-5] Claims 3, 5, 18 and 21 were rejected under 35 U.S.C. 112; [6-7] Claims 1-6, 8-16, and 18-21 were rejected under 35 U.S.C. 103(a) as being obvious over Mannering et al. (US 6,137,839) in view of Gossett et al. (US 6,230,177); and [8] Claim 7 and 17 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant has Amended Claims 1-10, 12-19 and canceled Claims 11, 20-21.

1-2. ABSTRACT OBJECTED TO FOR IMPROPER LANGUAGE AND FORMAT:

The language and format of the abstract were objected to.

Applicant has amended the abstract into a single paragraph of less than 150 words and deleted the objected to language.

3. THE DISCLOSURE WAS OBJECTED TO BECAUSE OF INFORMALITIES:

The disclosure was objected to because of informalities, specifically: a) the "Cross Reference to Related Application" section and language therein directed to both the status of the provisional applications and the attorney dockets therefore, b) the summary of invention section indicated to be missing, and c) the writing in full of acronyms at least once in the specification.

a) Applicant has amended the "Cross Reference to Related Application" to remove the attorney docket number and the phrase 'co-pending' with respect thereto. In a TPC with the Examiner DO the Examiner agreed that the addition of the phrase 'expired' was not required.

b) In the TPC with Examiner DO the Examiner requested that the Applicant supply copies of the Summary of Invention section of the originally filed application found on pages

3-4 thereof. Applicant has also attached a copy of the postcard showing receipt of the United States Patent Office of all 34 pages of the originally filed specification including those pages 3-4 which the Examiner indicated were missing from his copy.

c) Applicant has amended the specification to write in full selected ones of the acronyms found therein.

4-5. CLAIMS 3, 5, 18 AND 21 REJECTED UNDER 35 U.S.C. 112:

Claims 3, 5, 18 and 21 were rejected under 35 U.S.C. 112.

The objected to language in Claims 3, 5 and 18 has been deleted and Claim 21 has been cancelled.

6-7. CLAIMS 1-6, 8-16 AND 18-21 REJECTED UNDER 35 U.S.C. 103(a):

Claims 1-6, 8-16, and 18-21 were rejected under 35 U.S.C. 103(a) as being obvious over Mannering et al. (US 6,137,839) in view of Gossett et al. (US 6,230,177).

The Mannering reference does not disclose the delivery and pipeline processing of multiple communication channels in a single pipeline. The Mannering reference does not disclose 2-dimensional Fourier processing of a communication channel (Examiner at Page 4 of the Office Action of June 12, 2003). The Mannering reference discloses a fixed point processor for processing a discrete multi-tone (DMT) modulated X-DSL communication channel. (Mannering at Column 40, lines 35-65). The Gossett reference teaches the use of an image processing texture filter in a graphics processor to perform a multi-dimensional Fourier transformation using the texture filter's linear interpolators. The disclosure appears limited to the processing required to render a single image using the existing linear interpolators to perform a Fourier transform on selected pixels of the image. The Gossett reference does not disclose either pipelined delivery of communication channels nor on the fly reconfiguration of Fourier transform for successive channels.

Applicant has Amended Independent Claims 1 and 12 to include the limitations of a pipelined delivery and variable length pipelined 2-dimensional Fourier transformation of at least two communication channels, expressed as:

“... a) an input sample delivery circuit configured to deliver the at least two communication channels as a pipelined succession of two dimensional sample arrays each having dimensions corresponding with communication parameters of the associated one of the at least two communication channels; and

b) at least one row and column transform circuit coupled to the input sample delivery circuit to effect a pipelined 2-dimensional Fourier transformation of each successive sample array there from and a length of the pipelined 2-dimensional Fourier transformation dynamically reconfigured for each successive sample array to correspond with the dimensions thereof.” (Amended Claim 1, emphasis added).

“...delivering the at least two communication channels as a pipelined succession of two dimensional sample arrays each having dimensions corresponding with communication parameters of the associated one of the at least two communication channels; and

dynamically re-configuring a length of a pipelined 2-dimensional Fourier transformation of each successive sample array delivered in the delivering act to correspond with the dimensions of each successive sample array.” (Amended Claim 12, emphasis added).

These limitations found in Independent Claims 1 and 12 are neither taught nor disclosed in either of the cited references. It is therefore respectfully suggested that Amended Claims 1 and 12 have been placed in a condition for allowance. Amended Claims 2-6, 8-10 and 13-16, 18-19 are dependent from amended Independent Claims 1 and 12 respectfully and are believed to be in allowable form for the reasons discussed above and for other reasons of independent significance.

8. CLAIMS 7 AND 17 OBJECTED TO AS BEING DEPENDENT UPON A REJECTED BASE CLAIM:

Claim 7 and 17 were objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

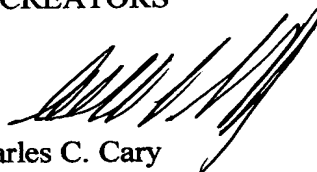
Applicant gratefully accepts the Examiner's acknowledgement of allowable subject matter in Claims 7 and 17. Applicant has amended Claims 7 and 17 into Independent form incorporating the limitations of the base and any intervening claims from which they originally depended. Applicant thus believes that Independent Claims 7, and 17 have been placed in a condition for allowance.

CONCLUSION

In view of the above remarks, and the amendments to the Claims, Applicant believes that all remaining Claims 1-10, 12-19 have been placed in a condition for allowance, and requests that they be allowed. Early notice to this effect is solicited.

The Commissioner is authorized to charge any additional fees which may be required, including petition fees and extension of time fees, to Deposit Account No. 50-1338 (Docket No. VELCP003).

Respectfully submitted,
IP CREATORS



Charles C. Cary
Registration No. 36,764

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P.O. Box 2789
Cupertino, CA 95015
Tel: (408) 257-5790
Fax: (408) 850-9585
E-mail: cccary@ipcreators.com